



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,575	12/17/2001	Gary J. Puppa	53921/189	6259
27871	7590	03/23/2006	EXAMINER	
BLAKE, CASSELS & GRAYDON LLP BOX 25, COMMERCE COURT WEST 199 BAY STREET, SUITE 2800 TORONTO, ON M5L 1A9 CANADA			NG, CHRISTINE Y	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/015,575	PUPPA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-7 and 20-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 4-7 is/are allowed.
- 6) ☒ Claim(s) 20-28 is/are rejected.
- 7) ☒ Claim(s) 29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23, 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 23, it is unclear what are "an egress port of the LSP" (line 2) and "the egress port of the edge switch" (line 5). These ports are not mentioned in the specification. Although Figure 4 shows ATM port 406, fabric port 410, fabric port 412 and MPLS port 408, it is unclear which one of these are egress ports.

Referring to claim 27, it is unclear what is "an ingress port on the edge switch" (lines 2-3). This port is not mentioned in the specification. Although Figure 4 shows ATM port 406, fabric port 410, fabric port 412 and MPLS port 408, it is unclear which one of these is an ingress port.

Referring to claim 28, it is unclear what are "an egress port of the routing path on the edge node" (lines 5-6) and "an ingress port of the routing path on the edge node" (line 12). These ports are not mentioned in the specification. Although Figure 4 shows ATM port 406, fabric port 410, fabric port 412 and MPLS port 408, it is unclear which one of these are an ingress port and egress port.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Publication No. 2002/0112072 to Jain.

Referring to claim 20, Jain discloses in Figure 7 for an ATM network (LANs 112-122) carrying an ATM connection in a label-switched path (LSP) over a core MPLS network (100), a method of notifying network nodes about a disruption in service. Refer to Section 0029. The method comprises the steps of:

- a) Providing an ATM/MPLS edge switch (PE's 102-110) at an interface between the ATM network and the MPLS network. Refer to Section 0029.
- b) Establishing a routing path (LSP's 702-708) traversing a first segment of the ATM network (CE 122 to PE 110), over the edge switch (PE 110) to the MPLS network (100) toward a second segment of the ATM network (PE 110 to CE 118). Refer to Sections 0077-0089.
- c) Monitoring (Figure 4, step 414) the routing path at the edge switch and generating an alarm signal (notification; Figure 4, step 416) upon detection of a

Art Unit: 2663

fault affecting the LSP. When a fault is detected at step 414, the PE that detects the failure sends a notification of the failure to its neighbors. Refer to Sections 0063-0066.

d) Transmitting the alarm signal (notification) to all network nodes of the ATM network affected by the fault. The PE that detects the failure sends a notification of the failure to its neighbors. Neighboring nodes propagate the fault information to other nodes of the network. Each node then determines whether the fault notification matches any network resources being used by that node in order to perform fault recovery. Refer to Sections 0067-0074.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21, 22, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2002/0112072 to Jain in view of U.S. Patent No. 6,775,239 to Akita et al, and in further view of U.S. Patent No. 6,424,629 to Rubino et al.

Referring to claim 21, Jain et al do not disclose that step c) comprises: c1) generating a change of state signal at a MPLS network interface on the edge switch for providing a failure state indication for the LSP; c2) transmitting the failure state indication to an ATM network interface on the edge switch; and c3)

Art Unit: 2663

based on the indication, generating at the ATM network interface the alarm signal.

Akita et al disclose in Figure 6 an edge switch (MPLS router 80 and ATM switch 90) between MPLS and ATM networks. The ATM network interface (ATM switch 90) generates (Figure 7, S66) a change of state signal (Figure 8, test signal 158: result of connection check) providing test results of the connection between the MPLS router 80 and ATM switch 90. The test signal 158, which carries the fault information, is transmitted to the MPLS router 80. MPLS router 80 then generates (Figure 7, S68 and S70) an alarm signal (notification of the test results) to maintenance terminal 70. Refer to Column 8, line 57 to Column 9, line 11. Akita et al do not disclose that the change of state signal is generated at the MPLS network and the failure state indication is transmitted to an ATM network. However, since a fault relating to the ATM network can be detected and indicated to the MPLS network, a fault relating to the MPLS network can also be detected and indicated to the ATM network. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that step c) comprises: c1) generating a change of state signal at a MPLS network interface on the edge switch for providing a failure state indication for the LSP; c2) transmitting the failure state indication to an ATM network interface on the edge switch; and c3) based on the indication, generating at the ATM network interface the alarm signal. One would be motivated to do so in order to notify the ATM network of faults detected by the MPLS network.

Jain et al also do not disclose that the alarm signal is an ATM OAM alarm indication.

Rubino et al disclose in Figure 3 that the ATM switch 106 monitors the status of the PVC 110 and when there is a PVC failure 112, the ATM switch transmits an Alarm Indication Signal (AIS) 114 to the local ATM router 102. The ATM switch 106 periodically and continuously transmits the AIS 114 until the PVC failure has been resolved. Refer to Column 5, line 53 to Column 6, line 57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the alarm signal is an ATM OAM alarm indication signal (AIS) packet, the motivation being that an ATM AIS cell is used in the conventional alarm surveillance mechanism to notify ATM routers of path failures.

Referring to claim 22, Jain et al do not disclose that step c1) comprises: monitoring from the MPLS network interface a status of the LSP using MPLS OAM packets received from the MPLS network; and detecting the fault and generating the failure state indication at the MPLS network interface, wherein the failure state indication indicates a failure in the MPLS across the MPLS network.

Akita et al disclose in Figure 6 an edge switch (MPLS router 80 and ATM switch 90) between MPLS and ATM networks. In Figure 7, steps 40-44, the MPLS router monitors the status between the MPLS router 80 and ATM switch 90 using OAM packets. The MPLS router 80 sends OAM cells to the ATM switch 90; the ATM switch 90 loops back the OAM cells; and the MPLS router matches the returned OAM cells with the transmitted OAM cells to find anomalies between

Art Unit: 2663

the MPLS router 80 and ATM switch 90. Refer to Column 7, line 50 to Column 8, line 15; and Column 9, lines 5-11. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that step c1) comprises: monitoring from the MPLS network interface a status of the LSP using MPLS OAM packets received from the MPLS network; and detecting the fault and generating the failure state indication at the MPLS network interface, wherein the failure state indication indicates a failure in the MPLS across the MPLS network. One would be motivated to do so in order to utilize conventional loopback OAM cells to test the connection between the MPLS router and ATM switch.

Referring to claim 24, refer to the rejection of claim 21. Furthermore, using the method of Akita et al, "it is possible to decide which one of the trunk switch and the MPLS router is suffering the fault" (Column 9, lines 5-11). Therefore, when the MPLS router is suffering the fault, the fault occurs at the MPLS network interface.

Referring to claim 26, refer to the rejection of claim 21. Furthermore, using the method of Akita et al, "it is possible to decide which one of the trunk switch and the MPLS router is suffering the fault" (Column 9, lines 5-11). Therefore, when the ATM switch is suffering the fault, the fault occurs at the ATM network interface.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2002/0112072 to Jain in view of U.S. Patent No. 6,775,239

Art Unit: 2663

to Akita et al in view of U.S. Patent No. 6,424,629 to Rubino et al, and in further view of U.S. Patent No. 6,810,046 to Abbas et al.

Refer to the rejection of claim 21. Furthermore, Jain et al do not disclose generating at the MPLS network interface an MPLS OAM forward defect indication (FDI) packet.

Abbas et al disclose that a forward defect indicator (FDI) can be used between transmitters and receivers to indicate downstream that a defect condition has been detected upstream. Refer to Column 9, lines 35-39; Column 15, lines 14-28; and Column 16, lines 57-67. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include generating at the MPLS network interface an MPLS OAM forward defect indication (FDI) packet, the motivation being in order to indicate that the transmit path is defective.

#### ***Allowable Subject Matter***

8. Claims 1, 2 and 4-7 are allowed.
9. Claims 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 20-28 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2663

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng *W*  
March 9, 2006



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600